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1 RECORD OF ORAL HEARING
2 UNITED STATES PATENT AND TRADEMARK OFFICE
3

4
5 BEFORE THE BOARD OF PATENT APPEALS
6 AND INTERFERENCES
7

8 *Ex Parte* PIERRE HOLZSCHUH, GEORG BUCH, and
9 JEAN-JACQUES WEILAND
10

11 Appeal 2009-010304
12 Application 10/765,123
13 Technology Center 1700
14

15 Oral Hearing Held: December 10, 2009
16

17 Before EDWARD C. KIMLIN, CHARLES F. WARREN, and
18 MARK NAGUMO, *Administrative Patent Judges*.
19
20

21 APPEARANCES:

22 ON BEHALF OF THE APPELLANT:

23 ROBERT A. MADSEN, ESQUIRE
24 Young & Thompson
25 209 Madison Street, Suite 500
26 Alexandria, VA 22314

1 The above-entitled matter came on for hearing Thursday, December
2 10, 2009, commencing at 2:04 p.m., at the U.S. Patent and Trademark
3 Office, 600 Dulany Street, Alexandria, Virginia, before Todd Brown, a
4 Notary Public.

5 THE USHER: Good afternoon, Calendar No. 44, Mr. Madsen.

6 JUDGE KIMLIN: Thank you.

7 THE USHER: You're welcome.

8 JUDGE KIMLIN: Good afternoon.

9 MR. MADSEN: Good afternoon, Your Honor.

10 JUDGE KIMLIN: Our transcriber today is Todd Brown. If you have
11 business cards for him, he'd appreciate them.

12 MR. MADSEN: I have with me Andrew Patch.

13 JUDGE KIMLIN: Pardon?

14 MR. MADSEN: I have with me Andrew Patch.

15 JUDGE KIMLIN: Welcome.

16 MR. PATCH: Thank you.

17 MR. MADSEN: May it please Your Honors, I will start by explaining
18 the invention as claimed and --

19 JUDGE KIMLIN: Perhaps you could speak just a little louder?

20 MR. MADSEN: Sure. I'll go through and explain the invention as
21 claimed and compare the key references for the independent claims.

22 In general, the claimed invention, as recited in the independent claims,
23 refers to a process for producing a smoked product by pyrolysis. Pyrolysis
24 is the thermal decomposition of organic material. And the claimed invention
25 is introducing organic material into a pyrolysis reactor at one end, and it is
26 being heated by a rotatable heated screw, and it is exiting this device at the

1 other end and it is referred to as consumed material in the claims. Also, at
2 this other end, the claimed invention is recovering smoke, as defined in
3 Independent Claims 1, 17 and 18.

4 The pyrolysis reactor is also substantially hermetically sealed, and
5 this, by having the controlled temperature, low oxygen because of the
6 hermetically -- substantially hermetically sealed reactor, is able to minimize
7 carcinogens, as recited in, for example, Claim 19, which refers to, at most,
8 10 parts per billion of benzo-pyrene and, at most, 20 parts per billion
9 benzo-anthracene.

10 There are also claims directed to product by-process, and they refer to
11 liquid smoke product, for example, and Claim 13 obtained by this process of
12 Claim 1, in having the same characteristics with the minimized amount of
13 carcinogens.

14 The references offered for rejecting the independent process claims
15 are based on two primary -- the two primary references are Underwood and
16 Grule (phonetic sp.). As far as Underwood is concerned, this is a fast or
17 flash pyrolysis, which, of course, is different than that which is being
18 claimed.

19 In order to accomplish this faster flash pyrolysis, Underwood requires
20 temperatures between 400 C and 650 C, and the times are -- the time for
21 conducting this pyrolysis is anywhere from below two or three seconds.

22 The flash fast pyrolysis is also in an oxygen-deprived environment,
23 and Underwood states that by doing so, he is able to also reduce the
24 carcinogens level. Admittedly, this is a similar result, with respect to one of
25 the carcinogens mentioned, and that's benzo-pyrene.

1 The Examiner recognizes that -- of course, Underwood does not teach
2 the rotatable heated screw, and offers a combination of Weissman and Lepez
3 to teach this concept.

4 However, the problem here is, the structure used by Weissman is a
5 conventional smoke generator, and this is not utilizing the high temperatures
6 or the short processing times required by Underwood in order to reach the
7 flash or fast pyrolysis. In fact, it's only being operated at about 200 to 220
8 degrees Fahrenheit or 104 degrees Celsius and --

9 JUDGE NAGUMO: Why is that a problem, though?

10 MR. MADSEN: The problem --

11 JUDGE NAGUMO: The Examiner seems to suggest that you could
12 use the conveyance, the screw, to introduce the material, and as I understand
13 your counterargument in your Brief was that, well, there's no disclosure of
14 the operating at the higher temperatures. But, I mean, you've got smiths and
15 the like and ovens, and hot ovens, and it seemed to be made out of the same
16 or similar materials. So, I didn't understand your argument.

17 MR. MADSEN: Your Honor, in the primary reference, we're starting
18 with no -- sort of no extrusion or rotatable screw type of arrangement. We're
19 dealing with simply a vacuum type, a fluidized bed type, or a rapid thermal
20 process, which includes exposing the product to hot articles, such as sand.

21 And the references cited by the Examiner in the case of Lepez, which
22 is the temperature issue we're talking about, they suggest using plastic
23 material.

24 JUDGE NAGUMO: Oh, but we don't take the precise materials and
25 everything. We're taking the concept and introducing -- I mean this is how I
26 understand the Examiner's rejection -- you've got a screw conveyor that can

1 be heated with an electric current, and we can use this to introduce our
2 material into a flash pyrolysis unit, and I mean --

3 MR. MADSEN: Yes.

4 JUDGE NAGUMO: -- if you put in a plastic screw, you're not going
5 to be able to heat it, but the Examiner points out that you can have an
6 electrically-conductive screw, and so the temperature problem seems to go
7 away. I still don't understand the basis of your objection here.

8 MR. MADSEN: Well, with the Lepez reference, they're describing
9 drying a roast, which is essentially removing moisture from the product. So
10 they're not looking at high temperatures. Also, with the Weissman, they're
11 also not looking at high temperatures.

12 JUDGE NAGUMO: But they're talking about introducing material
13 into a pyrolysis chamber with a screw conveyance. Why is that so
14 non-obvious, just because they're talking about lower temperatures? If they
15 were talking about higher temperatures, you're dealing with anticipation or
16 something close to it.

17 MR. MADSEN: Well, it's the combination, Your Honor, of the
18 temperature, as well as the structure, because if -- with Weissman, we
19 recognize that Weissman requires air to convey the volatiles out of this unit.

20 And if we look at the primary reference, Underwood, Underwood
21 does not want oxygen. He's operating in an oxygen-deprived environment.

22 JUDGE NAGUMO: Does the Weissman conveyance mechanism
23 require an open chamber? I mean it's --

24 MR. MADSEN: Yes, Your Honor. It -- what Weissman uses is
25 actually a central duct.

1 JUDGE NAGUMO: No, no. The Weissman conveyance means the
2 screw. Is that --

3 MR. MADSEN: The screw itself, Your Honor --

4 JUDGE NAGUMO: Is that required to operate --

5 MR. MADSEN: -- does not require the --

6 JUDGE NAGUMO: -- in a -- well, then, again, I'm -- the Examiner
7 didn't propose to use all of Weissman or Lepez and put the whole thing
8 bodily into Underwood.

9 MR. MADSEN: Yes.

10 JUDGE NAGUMO: So, again, I'm not quite getting your argument,
11 what is so faulty about the Examiner's proposed combination.

12 MR. MADSEN: The other aspect, structurally, Your Honor, is that
13 we're claiming that in Claims 1, 17 and 18, that the material, the spent
14 material, is being removed at the end opposite from the end that the organic
15 material enters. And, also, the smoked product is being recovered at that
16 same end and --

17 JUDGE NAGUMO: Well, the Claim 1, the last clause of it, says,
18 recovering the produced smoke from the other end of said at least one screw.

19 It seems to me that if I recovered any smoke that's produced at the far
20 end and away from where material enters the chamber, then I'm meeting the
21 claim.

22 I don't see why I have to read this limitation as every bit of smoke that
23 I recover from this chamber can only be recovered from the end of the
24 screw. And because I'm preferring to read the claim broadly.

25 MR. MADSEN: I understand.

1 JUDGE NAGUMO: And reasonably, in light of the disclosure. And
2 is there anything in the disclosure that you can direct me to that would put
3 me away from my broader reading? In other words, if I take anything, any
4 of the smoke from this end, the far end, I've met that limitation.

5 MR. MADSEN: Your Honor, as far as particularly pointing out
6 where it's recovered, there's only one section in the specification that I can
7 think of. And it refers to the end of the screw -- or, sorry -- it refers to the
8 end of the rotatable screw.

9 However, with the Weissman reference, they're speaking of removing
10 the volatile product through the top.

11 JUDGE NAGUMO: But, as I said, it seems to me they get -- they
12 recover smoke from the entire length of the screw. I mean wherever smoke's
13 coming up, it's rising and it's being collected.

14 MR. MADSEN: Right, right.

15 JUDGE NAGUMO: Why isn't that meeting this limitation, read the
16 way I'm reading it anyway, that as long as I'm collecting smoke from the far
17 end of the screw, I'm meeting that limitation?

18 MR. MADSEN: You're recovering it from the end.

19 JUDGE NAGUMO: I'm recovering some smoke that's originating
20 from the end of the screw.

21 MR. MADSEN: Recovering the produced smoke --

22 JUDGE NAGUMO: Right.

23 MR. MADSEN: -- from the end of the screw.

24 JUDGE NAGUMO: Right. I'm recovering some. And Weissman is
25 recovering some from that end of the screw.

1 MR. MADSEN: Weissman is directed to removing it from the top.
2 Weissman may remove some from the screw.

3 JUDGE NAGUMO: And why doesn't that meet this limitation?
4 There's no exclusionary language, I can see, if it says you collect it only
5 from the end of -- the only smoke you collect is collected from the end.
6 I don't see that in the claim. Where -- I mean, where do I find that in the
7 claim, in your view?

8 MR. MADSEN: It does not recite only. It does not.

9 But with the combination, looking at Underwood, if Underwood is
10 interested in obtaining a flash for fast process for pyrolysis, the question is:
11 can one obtain the fast or flash via the conventional systems that are taught
12 by Weissman and Lepez?

13 JUDGE NAGUMO: And where is this argument presented in the
14 Brief?

15 MR. MADSEN: It is -- Your Honor -- and the statement, Your
16 Honor, is at the first full paragraph on page 12, the conclusion. And the
17 comment made is, that is, the screws require low temperature and an air
18 supply, and there would have been no expectation of success because
19 Underwood discloses that without fast or flash methods in the oxygen-
20 starved environment, one obtains lower smoke yields and higher levels of
21 benzo-pyrene.

22 JUDGE NAGUMO: Well, I see the argument there about low
23 temperature and air supply, but I don't see where either of the screw
24 references suggest, or would suggest to one of ordinary skill in the art that a
25 screw supply mechanism is necessarily limited to low temperature or to a
26 chamber and that it has an oxygen-limited air supply.

1 MR. MADSEN: As the reference is cited, Your Honor, the
2 temperatures taught in Weissman are very low, and --

3 JUDGE NAGUMO: Yes, they're very low. That's not -- I don't
4 understand the Examiner to have taken the entire process, or entire
5 apparatus, of either reference and tried to incorporate all of that, including
6 the desired processing conditions --

7 MR. MADSEN: In order --

8 JUDGE NAGUMO: -- and to Underwood.

9 MR. MADSEN: Excuse me, Your Honor. In order to achieve a fast
10 or flash pyrolysis, an arrangement similar to that proposed by the Examiner,
11 it does not suggest less than two or three seconds, for example.

12 JUDGE NAGUMO: Well, that's what I'm asking. Where is that
13 argument presented in the Brief?

14 MR. MADSEN: With respect to the time? The argument begins,
15 Your Honor, on page 10, stating that Underwood discloses fast or flash
16 pyrolysis methods at high temperature, e.g., of 400 C, combined with short
17 residence times, and, e.g., three seconds, at most.

18 And, as explained, the paragraph continuing on page 11, Underwood
19 discloses that the advantages of these methods over conventional methods
20 includes a higher smoke yield and a very low level of benzo-pyrene, a
21 known carcinogen. Then, on the second to last paragraph, Weissman
22 discloses a conventional smoke generator, at temperatures far below those of
23 Underwood, and then the conclusion, as I had referred to before, regarding
24 faster flash methods.

25 JUDGE NAGUMO: Maybe if you could tell us a little bit about the
26 other rejection based on Grule?

1 MR. MADSEN: Yes. Okay, on -- for Grule, Grule is using a
2 paralysis method to obtain a catalyst, a carbon-based catalyst. And the
3 combination is Grule does teach a rotatable screw. And the Examiner relies
4 on Lepez to teach the heating of the screw. And the combination, as we had
5 argued, one would have been discouraged from making this combination
6 because these are unrelated and the fact that, as mentioned before, Lepez is
7 focused on drawing and roasting, and Grule is focused on creating this
8 catalyst by this thermal decomposition. And there is no teaching for a
9 specific temperature range, as disclosed or as claimed, and the combination
10 again does not teach that you are removing the consumed material and
11 covering the smoke at the end opposite from the introduction.

12 And another point is the convention of Grule is the volatiles or the
13 smoke products of those are accumulated within the apparatus, and for that
14 reason, it appears that they're of no interest, they're a byproduct and they're
15 not being recovered at the end because of the discussion of it being
16 accumulated. In fact, they also discuss having these products burnt for
17 potential recovery.

18 JUDGE NAGUMO: I have no further questions.

19 JUDGE KIMLIN: No further questions.

20 Well, thank you for coming, Mr. Madsen.

21 MR. MADSEN: Thank you very much, Your Honor.

22 Whereupon, the proceedings, at 2:26 p.m., were concluded.
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